Serial No.: 09/882,138
Docket No.: 26769-1

Examiner: J. Amini
Art Unit: 2672

CLAIM AMENDMENTS

1. (Currently amended) A method for combining at least two adjacent image segments to print ~~form~~ a larger composite image on a photosensitive surface, comprising:

establishing a first region on the ~~of a~~ photosensitive surface ~~coated substrate~~ in which a first image segment will be printed, wherein the first image segment includes a buffer region comprising a plurality of pixels that overlap both the first image segment and an adjacent second image segment;

printing, with a printing device, the first image segment onto the first region of the photosensitive surface, including the buffer region, while modifying the intensity of the pixels printed in the buffer region by a first ramp value;

establishing a second region on ~~of~~ the photosensitive surface ~~coated substrate~~ in which the ~~a~~ second image segment will be printed adjacent to the first image segment;

indexing at least one of the printing device and the photosensitive surface relative to one another to print the second image segment on the photosensitive surface;

~~defining a buffer region comprising a plurality of pixels associated with both image segments;~~

~~printing, with a printing device, the first image segment, including the buffer region associated with the first image segment onto a first area of the photosensitive coated substrate;~~

~~modifying the intensity of the pixels in the buffer region associated with the first image segment by a first ramp value;~~

~~moving at least one of the printing device and the photosensitive coated substrate relative to one another to print a second area of the photosensitive coated substrate;~~

printing, with the printing device, the second image segment, including the buffer region ~~associated with the second image segment~~ onto the second area of the photosensitive ~~coated substrate~~ surface, while modifying the intensity of the pixels printed in the buffer region by a second ramp value; ~~and~~

~~modifying the intensity of the pixels in the buffer region associated with the second image segment by a second ramp value;~~

whereby the first image segment and the second image segment ~~are~~ substantially overlap ~~overlapped~~ in the buffer region to form the larger composite image on the photosensitive surface.

2. (Canceled)

3. (Currently amended) A method according to claim 1 wherein the first ramp value and the second ramp value are opposite one another whereby the ultimate intensity of the pixels in the buffer region is substantially the same as the intensity of the pixels in the first image segment and the second image segment that are not overlapped in the buffer region.

4. (Previously presented) A method according to claim 1 wherein the intensity of the pixels in the buffer region sums to substantially full scale.

5. (Canceled)

6. (Currently amended) A method according to claim 1 wherein the intensity of the pixels in the buffer region is modified by modulating the amplitude of a beam of electromagnetic radiation capable of exposing the ~~a~~ photosensitive surface ~~coated substrate~~.

7. (Previously presented) A method according to claim 6 wherein the intensity of the pixels in the buffer region is modified by modulating the amplitude of a beam of light.

8. (Previously presented) A method according to claim 6 wherein the intensity of the pixels in the buffer region is modified by modulating the amplitude of a laser beam.

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9. (Original) A method according to claim 6 wherein the amplitude of the beam is modified by external modulation.

10. (Original) A method according to claim 6 wherein the amplitude of the beam is modified by internal modulation.

11. (Canceled)

12. (Currently amended) A method according to claim 8 ~~6~~ wherein the amplitude of the laser beam is modified by an Acousto-Optic Modulator.

13. (Currently amended) A method according to claim 1 wherein the printing of the first and second image segments is achieved by ~~through a process selected from the group consisting of~~ scanning the ~~a~~ photosensitive surface ~~coated substrate by~~ with a rotating polygon scanner, a rotating single facet mirror scanner or a rotating holographic scanner illuminated by the exposing radiation source.

14. (Currently amended) A method according to claim 1 wherein the printing of the first and second image segments is achieved by exposing the ~~through having a~~ photosensitive surface ~~coated substrate exposed by~~ using a fixed pattern array of individually segmented light sources.

15. (Original) A method according to claim 14 wherein the printing of the first and second image segments uses a laser beam.

16. (Original) A method according to claim 14 wherein the printing of the first and second image segments uses light valves illuminated by a light source.

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17. (Original) A method according to claim 14 wherein the printing of the first and second image segments uses micromirrors illuminated by a light source.

18. (Currently amended) A method according to claim 1 wherein the printing of the first and second image segments is achieved by exposing the ~~through having a~~ photosensitive surface using ~~coated substrate exposed by~~ a fixed pattern array of radiation sources.

19. (Currently amended) A method for creating a buffer region for printing a larger composite image comprising at least two adjacent image segments on a photosensitive surface, comprising:

defining the buffer region as a plurality ~~number~~ of pixels that overlap a first image segment and an adjacent second image segment ~~extending into any two adjacent image segments~~;

defining a first rate at which the intensity of the pixels in the buffer region will be attenuated across the buffer region during ~~in~~ printing, with a printing device, the a first image segment, including the buffer region, on ~~onto~~ a first area of a photosensitive surface ~~coated substrate~~; and

defining a second rate at which the intensity of the pixels in the buffer region will be attenuated across the buffer region during ~~in~~ printing, with the printing device, a the adjacent second image segment, including the buffer region, on ~~onto~~ a second area of the photosensitive surface ~~coated substrate~~ after indexing ~~moving~~ at least one of the printing device and the photosensitive surface ~~coated substrate~~ relative to one another.

20. (Currently amended) A method according to claim 19 wherein the first rate and the second rate at which the intensity of the pixels is attenuated are opposite one another whereby the ultimate intensity of the pixels in the buffer region is substantially the same as the intensity of the pixels in the first image segment and the second image segment that are not overlapped by the buffer region.

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21. (Original) A method according to claim 19 wherein the intensity of the pixels in the buffer region sum to substantially full scale.

22. (Currently amended) A printing system capable of creating a larger composite image comprising at least two adjacent image segments on a photosensitive surface, comprising:

a pixel counter for counting a number of exposed pixels;

an integrator which outputs an intensity value in a buffer region according to an initial value for the intensity value and a ramp rate that defines a change in the intensity value from the initial value, wherein the buffer region comprises a plurality of pixels that overlap a first image segment and an adjacent second image segment;

a multiplier which converts digital pixel data and the intensity value into analog data;

an intensity modulator which modulates electromagnetic radiation in accordance with the analog data; and

a printing device which prints the ~~a~~ first image segment, including the buffer region, defined by the electromagnetic radiation onto a first area of the ~~a~~ photosensitive surface ~~coated substrate~~ and, after indexing ~~moving~~ at least one of the printing device and the photosensitive surface ~~coated substrate~~ relative to one another, prints the ~~a~~ second image segment, including the buffer region, defined by the electromagnetic radiation onto a second area of the photosensitive surface ~~coated substrate~~, wherein the intensity of the pixels printed in the buffer region is modulated.

23. (Original) A printing system according to claim 22 wherein the intensity modulator is an amplitude modulator.

24. (Original) A printing system according to claim 23 wherein the amplitude modulator is an Acousto-Optic Modulator (AOM).

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25. (Original) A printing system according to claim 22 wherein the intensity modulator is a phase modulator.

26. (Original) A printing system according to claim 22 wherein the intensity modulator is a frequency modulator.

27. (Original) A printing system according to claim 22 wherein the intensity modulator is a code domain modulator.

28. (Currently amended) A printing system capable of creating a larger composite image comprising at least two adjacent image segments on a photosensitive surface, comprising:

means for counting a number of exposed pixels;

means for computing an intensity value in a buffer region according to an initial value for the intensity value and a ramp rate that defines a change in the intensity value from the initial value, wherein the buffer region comprises a plurality of pixels that overlap a first image segment and an adjacent second image segment;

means for converting the intensity value and digital pixel data into analog data;

means for modulating intensity of electromagnetic radiation in accordance with the analog data; and

printing means for printing the ~~a~~ first image segment, including the buffer region, defined by the electromagnetic radiation onto a first area of a photosensitive surface ~~coated substrate~~ and, after indexing ~~moving~~ at least one of the printing device and the photosensitive surface ~~coated substrate~~ relative to one another, printing the ~~a~~ second image segment, including the buffer region, defined by the electromagnetic radiation onto a second area of the photosensitive surface ~~coated substrate~~, wherein the intensity of the pixels printed in the buffer region is modulated.

29. (Original) A printing system according to claim 28 wherein the ramp rate is defined as the percentage of modulation per in-scan pixel.

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30. (Original) A printing system according to claim 28 wherein the intensity value is computed from a ramp rate and an initial value by an integrator.

31. (Original) A printing system according to claim 28 wherein the intensity value and digital pixel data are converted into analog data by a multiplier.

32. (Original) A printing system according to claim 28 wherein a means for modulating intensity is amplitude modulation.

33. (Original) A printing system according to claim 32 wherein the amplitude modulation is accomplished by an Acousto-Optic Modulator.

34. (Original) A printing system according to claim 28 wherein the means for modulating intensity is phase modulation.

35. (Original) A printing system according to claim 28 wherein the means for modulating intensity is frequency modulation.

36. (Original) A printing system according to claim 28 wherein the means for modulating intensity is code domain modulation.

37. (Currently amended) A method according to claim 1 wherein the photosensitive surface is ~~coated substrate comprises~~ a photosensitive printing plate or a photosensitive printing drum.

38. (New) A method according to claim 1, wherein the width of the first image segment and the second image segment is less than or equal to a maximum scan width of the printing device.

39. (New) A printing system according to claim 22, wherein the printing device is a raster output scanner.

40. (New) A printing system according to claim 28, wherein the printing device is a raster output scanner.